

AMENDMENTS TO THE CLAIMS

Listing of Claims

Claims 1 – 15 (cancelled)

Claim 16 (currently amended) A method of identifying a characteristic of a region of a tissue sample, the method comprising the steps of:

- (a) applying a contrast agent to a region of a tissue sample;
- (b) obtaining at least one reflectance signal from the region of the tissue sample within a window of time, wherein the window of time begins at about 30 seconds following application of the contrast agent and ends at about 130 seconds following application of the contrast agent~~predetermined period of time that is optimal for observing a characteristic of the tissue;~~
- (c) obtaining a fluorescence signal from the region of the tissue sample within the ~~predetermined period~~ window of time; and
- (d) identifying a characteristic of the region based at least in part on the fluorescence signal and at least one of the at least one reflectance signals.

Claim 17 (currently amended) The method of claim 16, the method further comprising the step of obtaining a video signal from the region of the tissue sample within the ~~predetermined period~~ window of time.

Claim 18 (original) The method of claim 17, wherein step (d) comprises identifying a characteristic of the region based at least in part on the fluorescence signal, at least one of the at least one reflectance signals, and the video signal.

Claim 19 (currently amended) The method of claim 16, wherein step (b) comprises obtaining two reflectance signals from the region of the tissue sample within the ~~predetermined~~ periodwindow of time.

Claims 20 – 41 (cancelled)

Claim 42 (new) The method of claim 16, wherein the characteristic is a state of health.

Claim 43 (new) The method of claim 42, wherein the state of health comprises at least one of the group consisting of normal squamous tissue, normal columnar tissue, metaplasia, immature metaplasia, mature metaplasia, CIN1, CIN2, CIN3, CIS, and cancer.

Claim 44 (new) The method of claim 16, wherein the identifying step (d) comprises determining whether the region of the tissue sample is CIN 2+ tissue.

Claim 45 (new) The method of claim 16, wherein the contrast agent comprises acetic acid.

Claim 46 (new) The method of claim 16, wherein the contrast agent is selected from a group consisting of formic acid, propionic acid, butyric acid, Lugol's iodine, Shiller's iodine, methylene blue, toluidine blue, indigo carmine, indocyanine green, and fluorescein.

Claim 47 (new) The method of claim 16, wherein the tissue sample comprises cervical tissue.

Claim 48 (new) The method of claim 16, wherein the tissue sample comprises at least one of a group consisting of colorectal tissue, gastroesophageal tissue, urinary bladder tissue, lung tissue, and skin tissue.

Claim 49 (new) The method of claim 16, wherein the tissue sample comprises epithelial cells.

Claim 50 (new) The method of claim 16, wherein step (b) comprises obtaining the at least one reflectance signal from the region within a period of time that begins at about 60 seconds following application of the contrast agent and ends at about 80 seconds following application of the contrast agent.

Claim 51 (new) The method of claim 16, wherein step (b) comprises obtaining the at least one reflectance signal from the region within a period of time that begins at about 70 seconds following application of the contrast agent and ends at about 130 seconds following application of the contrast agent.

Claim 52 (new) The method of claim 16, wherein step (d) comprises identifying the characteristic of the region with an accuracy of at least about 70%.

Claim 53 (new) The method of claim 16, wherein step (b) comprises obtaining a reflectance intensity from the region at each of a plurality of wavelengths within the window of time.

Claim 54 (new) The method of claim 16, wherein step (c) comprises obtaining a fluorescence intensity from the region at each of a plurality of wavelengths within the window of time.

Claim 55 (new) The method of claim 54, wherein step (d) further comprises obtaining a video signal from the region within the window of time.

Claim 56 (new) The method of claim 16, wherein step (a) comprises applying a contrast agent to a plurality of regions of the tissue sample; step (b) comprises obtaining at least one reflectance signal from each of the plurality of regions within the window of time; step (c) comprises obtaining a fluorescence signal from each of the plurality of regions within the window of time; and step (d) comprises identifying a characteristic of each of the plurality of regions.

Claim 57 (new) The method of claim 16, wherein step (d) comprises identifying a characteristic of the region based substantially on at least one optical signal, obtained within the window of time.

Claim 58 (new) The method of claim 16, wherein the window of time begins at 20 seconds following application of the contrast agent.